REMARKS

Upon entry of the Amendment, Claims 1-20 are pending in the application.

Claims 1, 11 and 19 are amended to recite that "said group-III nitride crystal layer comprises a light-emitting layer and a clad layer" and that the surface ohmic electrode is arranged between a surface of the group-III nitride clad layer and the window layer and comes into contact with the surface of the group-III nitride clad layer. Claims 8 and 20 are amended to conform to claims 1 and 19, respectively. Support can be found, for example, at page 11, lines 6-9, 12-15 and 27-29; and page 12, lines 6-10 of the specification as originally filed, along with Fig. 3. No new matter is added.

Claims 21-22 were previously canceled.

Claims 8-10 and 18 were previously withdrawn from consideration by the Examiner.

Entry of the Amendment along with reconsideration and review of the claims on the merits are respectfully requested.

Claim Rejections - 35 U.S.C. § 103(a)

A. Claims 1-3 and 6-7 are rejected under 35 U.S.C. §103(a) as unpatentable over Ming-Jiunn et al. in view of Ohba et al., Lee et al., and Okazaki et al., for the reasons of record.

B. Claims 4 and 5 are rejected under 35 U.S.C. §103(a) as being unpatentable over Ming-Jiunn, Ohba, Lee, and Okazaki as applied to claim 1 above, and further in view of Bastek, for the reasons of record.

C. Claims 11-13, 16, 17, 19 and 20 are rejected under 35 U.S.C. §103(a) as being unpatentable over Ming-Jiunn in view of Lee and Okazaki, for the reasons of record.

D. Claims 14 and 15 are rejected under 35 U.S.C. §103(a) as being unpatentable over Ming-Jiunn, Lee, and Okazaki as applied to claim 11 above, and further in view of Bastek, for the reasons of record.

The Examiner states that Applicant's arguments filed October 18, 2004, have been considered but are not persuasive.

The Examiner states that with regard to Applicant's argument that Lee teaches a Schottky barrier, the Examiner clarifies his position, and states that an ohmic contact is formed at the interface between the conductive transparent oxide layer 60 and the window layer 56, citing column 4, lines 47 - 52 of Lee. The Examiner asserts that Lee describes that during normal (lead) operating conditions a Schottky barrier is produced in the regions where window layer 56 and transparent conductive layer 62 are in direct contact. But, the Examiner asserts that ohmic contact persists in the regions where contact layer 58 is between window layer 56 and transparent conductive layer 62.

The Examiner asserts that Applicant's lack of discussion (in the present specification) of the absence of a Schottky barrier in regions where the group-III nitride crystal layer is in direct contact with the claimed window layer does not preclude formation of a Schottky barrier during normal operation of the light-emitting diode of the invention.

With regard to Applicant's arguments that "the interface of layers 306/305 in Fig. 3 of the present specification does not form a Schottky barrier," the Examiner asserts that Applicant's

original specification does not support this statement, and assertedly suggests the creation of a Schottky barrier even though not explicitly identified as such.

While the Examiner notes that the dopant types in the layers of Lee and the presently disclosed application are opposite, he asserts that one of ordinary skill would recognize that similar results can be obtained with oppositely doped devices, and furthermore because the dopant types are not claimed, the argument is not persuasive.

Applicant responds as follows.

As previously noted, Claims 1, 11 and 19 are amended to recite that "said group-III nitride crystal layer comprises a light-emitting layer and a clad layer". The surface ohmic electrode is arranged between a surface of the group-III nitride clad layer and the window layer and comes into contact with the surface of the group-III nitride clad layer.

Neither Ming-Jiunn or Lee or their combination together or with other secondary references render obvious the present invention.

Neither Ming-Jiunn et al or Lee et al discloses at least a window layer covering and in contact with the surface of the group-III nitride clad layer on the entire projected region of the pad electrode. Indisputably, this limitation is not met by Fig. 7 of Ming-Jiunn et al, where transparent window layer 11B is not in contact with clad layer 13.

In response to Applicants' argument that the above-noted limitation is not met by any of the figures of Lee, where conductive transparent oxide layer 60 is not in contact with top clad layer 544, the Examiner stated that the rejection does not rely on the conductive transparent oxide layer being in contact with clad layer 544. Instead, the Examiner stated that the rejection

relies on the conductive transparent oxide layer 60 of Lee being in contact with the group-III crystal window 56.

However, the window layer 56 of Lee et al is not a group-III nitride clad layer. Although a clad layer is a transparent material, a clad layer does not function to diffuse current in a field such as the window layer of Lee's structure. A clad layer is a layer which forms a light emitting part, and its function is different from that of a window layer.

More importantly, Lee does not disclose or teach the required window layer covering and in contact with a surface of a group III nitride clad layer. Namely, window layer 56 of Lee et al is a transparent material such as GaP, GaAsP, GaInP or AlGaAs (col. 4, lines 38-39), but it is not a group-III nitride clad layer.

Furthermore, the Examiner's position that Lee and the present invention both form a Schottky barrier (between the window layer 306 and the upper clad layer 305 in region 307a) and ohmic contacts (between the surface ohmic electrodes 308 and the upper clad layer 305) is mistaken. Particularly, although the interface of layers 60 and 56 of Lee form a Shottky barrier, window layer 306 and upper clad layer 305 of the present invention form an ohmic contact. That the interface of a window layer, represented by ITO, and a semiconductor layer form an ohmic contact is a technical fact well known and recognized by those of ordinary skill in the art, as indicated by T. Margalith et al (of record).

Thus, neither Ming-Jiunn nor Lee meets the above limitation of Claims 1, 11 and 19 such that the combination of the two references could never achieve the present invention. This

limitation is simply missing. Furthermore, no secondary reference overcomes the deficiencies of Ming-Jiunn or Lee.

Applicant submits that Claims 2-7, 12-17 and 20 are patentable for at least the reason that they depend on independent Claims 1, 11, and 19.

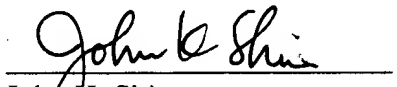
Accordingly, Applicant respectfully requests reconsideration and withdrawal of the rejections under 35 U.S.C. § 103(a).

Conclusion

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,



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